



A Faster Fastener

A new nut has arrived from outer space to benefit the people on Earth—possibly even saving lives. M&A Screw and Machine Works of Philadelphia, Pennsylvania, has a non-exclusive license with NASA Marshall Space Flight Center to market a quick connect nut.

Evolving from technology developed from Pathfinder, a project for developing in-space assembly techniques, the space-aged nut is installed by simply pushing it onto a standard bolt and giving it a quick quarter-turn to lock it in place. It can be removed by unscrewing it like a conventional nut. The patented design uses a coiled spring and C-clips to provide the necessary tension to secure the nut in place around a bolt.

The new design is portable, easy to store, has an unlimited shelf life, and can be used under the same conditions as a conventional nut. The nuts can be made from several metals, including aluminum, stainless steel and cast iron, depending on the weight and strength requirements of the application.

The quick connect nut is usually three times the size of nuts typically found in hardware stores, and is custom made for specific applications. The cost of each varies with the materials and size required. The devices have the strength of conventional nuts and are virtually fail proof.

Bruce Weddendorf, former engineer at Marshall and the inventor of the quick connect nut, foresees possibilities of using his invention undersea. Weddendorf believes similar problems are faced undersea and in space that the nut could address, such as the need for speed during assembly in such dangerous environments. One place the quick connect nut could be used undersea is on oil drilling platforms.

M&A has already supplied the nuts to an aerospace company for use on a portable wind tunnel and has received interest from several other companies, including a poultry producer looking to speed up repairs on conveyor belts.

Norman Morse, vice president of M&A, projects other applications for the quick connect nut as well, such as in fire and rescue missions,



The quick connect nut licensed by M&A Screw and Machine Works is pushed onto the bolt and locked into place with a single twist.

disaster relief, and in the mining industry. The device could be used to erect support barriers during mining operations, where speed is a necessity to reduce the risk placed on the miners.

Morse also sees the possibility of replacing the multiple lug nuts on automobiles with just one quick connect nut. Even racecars could use the single nut, which would substantially reduce the amount of time pit crews expend changing tires during a pit stop.

The quick connect nut is suitable for any situation where assembly is required and time is of the essence. Currently, the quick connect nut is being used in a new magnetic resonance imaging (MRI) table under development. M&A hopes to expand its customer base by finding more applications for this speedy fastener.